

REMARKS

The Official Action dated October 27, 2009 has been received and its contents carefully noted. In view thereof, claims 1-3 have been amended in order to better define that which Applicants regard as the invention. As previously, claims 1-3 are presently pending in the instant application.

Turning now to the Official Action, and particularly page, 2 thereof, claims 1-3 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Minami et al. in view of Yamaji et al. This rejection is respectfully traversed for at least for the reason discussed hereinbelow in that Minami et al., when taken alone or in view of the teachings of Yamaji, fails disclose or suggest each and every limitation recited in the rejected claims.

As can be seen from the foregoing amendments, claim 1 has been amended to recite a heater unit to be mounted on a valve having flow path forming sections including a body connected to a fluid piping system through joints, and having an actuator connected to the body with the unit comprising a main body constructed in the form of a housing having pipe through-holes and an actuator exposing opening, the actuator exposing opening covering at least a part connecting the body and the actuator, and a heater built in the main body, wherein the heater comprises a direct heating section configured to heat the body of the valve through direct contact heating, and a radiant heating section surrounding the direct heating section configured to heat the inside of the main body by radiant heat. Accordingly, the body, the part connecting the body and the actuator and joints are entirely covered by the main body so that only the fluid piping system is exposed from the pipe through-holes, and the flow path forming sections and the joints are constructed so as to be heated by the radiant heat from the radiant heating section. It is respectfully submitted that Minami et al., when taken alone or in view of the teachings of Yamaji, fails disclose or suggest that which is specifically recited by Applicant's claimed invention.

The temperature of a fluid when it passes through a flow path forming section of a valve should be kept in a predetermined range in accordance with the type of the fluid. That is, some gases can be deposited in the valve when the temperature is low; however, in the case in which the fluid is liquid, the viscosity of the liquid may be increased when the temperature is near room temperature, which can create deposits in the valve and obstruct the flow of the liquid. Further, in the case where the fluid is an organic material, decomposition

may occur at high temperatures. Consequently, as set forth by Applicant's claimed invention, it is beneficial to maintain the temperature of the fluid within an appropriate range in the flow path forming section. Accordingly, it is important to cover the entire part of the flow path forming section and joints with the main body as is set forth by Applicant's claimed invention.

In rejecting Applicant's claimed invention, the Examiner again notes that sheet 13 of Minami et al. can be an aluminum plate of high conductivity, which would be a direct heating element, and heaters 12 would inherently provide radiant heating to the interior of the main body. However, as noted previously, Minami et al. explicitly discloses that member 13 is an insulation silicon sheet interposed between a side heater 12 and a fluid controller body 2. Minami et al. further discloses that the insulating silicon sheet may be replaced by an aluminum plate formed with a 30-micrometer-thick anodic oxide coating over its surface to afford insulation. The Examiner is further of the position that this structure corresponds to the heater 16, stainless panel forming the radiant section 24 and the pipes of the instant application. However, as can be seen from the foregoing amendments, independent claim 1 has been amended to recite that body, the part connecting the body and the actuator and joints are entirely covered by the main body so that only the fluid piping system is exposed from the pipe through-holes. Further, independent claim 1 recites that the direct heating section is configured to heat the body of the valve through direct contact heating, and the flow path forming sections and the joints are constructed so as to be heated by the radiant heat from the radiant heating section. This is clearly not the case with the structure set forth by Minami et al. wherein the direct heating section of Minami et al. is configured to heat the side heater and not the body of the valve through direct contact heating. In fact, Minami et al. includes the cushion member 17 which cushions and insulates the main body from the heater and pushes the heater towards the controller body. While the Examiner is of the position that the cushion 17 is of no consequence, with respect to Applicant's claimed invention as set forth in independent claim 1, as amended, it is directly contrary to that which is claimed. As discussed in Applicant's previous response, the insulation property of the cushion 17 and the thermoplastic reinforced polyester resin in the holding members 14, 15, reduces the heaters effect on the body. Hence, in view of the numerous direct heating means and the use of insulation materials described in Minami, the Examiner's contention that the cushion 17 and the polyester resin holding members 14 and 15 are of no consequence is clearly erroneous.

With respect to the teachings of Yamaji et al., while this reference may disclose a system including heat tape extending the entire length of the device, this reference clearly fails to overcome the significant shortcomings associated with the teachings of Minami et al. as discussed in detail hereinabove.

Therefore, it is respectfully requested that the foregoing amendments be entered and fully considered by the Examiner, that claims 1-3 be allowed and that the application be passed to issue.

If any issues remain that may be resolved by a telephone or facsimile communication with the Applicant's representative, the Examiner is invited to contact the undersigned at the numbers shown.

Further, while no fees are believed to be due, the Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 50-4525.

Respectfully submitted,

/Donald R. Studebaker/
Donald R. Studebaker
Registration No. 32,815

Studebaker & Brackett PC
1890 Preston White Drive
Suite 105
Reston, Virginia 20191
(703) 390-9051
Fax: (703) 390-1277
don.studebaker@sbpatentlaw.com